

PREPROCESSING METHODS FOR ROBUST TRACKING OF CORONARY  
ARTERIES IN CARDIAC COMPUTED TOMOGRAPHY IMAGES  
AND SYSTEMS THEREFOR

ABSTRACT

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[0036] <sup>P</sup>The preprocessing methods of this invention remove the data relating to the cavities of the heart, and improve the density mix of the parts left therein during CT imaging, so as to allow coronary arteries to be more accurately tracked with conventional tracking algorithms than currently possible. An embodiment comprises: obtaining an original CT voxel dataset comprising a plurality of voxels; creating a heart voxel dataset from the original voxel dataset comprising only voxels belonging to the heart; creating a heart minus cavities voxel dataset by removing voxels belonging to the left and right ventricles, the left and right atriums, and the aorta from the heart voxel dataset; enhancing predetermined voxels in the heart minus cavities voxel dataset to create an enhanced heart minus cavities voxel dataset; and mixing an intensity of the original CT voxel dataset with an intensity of the enhanced heart minus cavities voxel dataset to create the pre-processed voxel dataset.